

CLAIMS

1. A rotary electrical machine comprising a stator (5) and a rotor (4), the rotor (4) including zones (26) which are adapted for balancing operations thereon, together with at least one fan (7, 9) which is adapted to be mounted on the rotor 5 and which includes a radial plate portion (3) and fan blades (9a, 9b), characterised in that the fan fixed on the rotor is pre-balanced.
2. A rotary electrical machine according to Claim 1, characterised in that the radial plate portion of the fan has a non-constant thickness.
3. A rotary electrical machine according to Claim 2, characterised in that the 10 radial plate portion of the fan includes portions of material of increased thickness and/or thinned zones.
4. A rotary electrical machine according to Claim 3, characterised in that the radial plate portion of the fan includes holes.
5. A rotary electrical machine according to Claim 1, characterised in that at least 15 one blade includes additions of material (14a, 14b, 14c, 14d, 14e) for the purpose of balancing the fan.
6. A rotary electrical machine according to Claim 1, characterised in that at least one blade has a chamfer (22) for the purpose of balancing the fan.

7. A rotary electrical machine according to Claim 1, characterised in that the fan is a fan consisting of two superimposed fans (21, 22).
8. A rotary electrical machine according to Claim 7, characterised in that at least one of the two fans includes added elements or thinned portions, or has material removed, with a view to balancing it.
9. A rotary electrical machine according to Claim 8, characterised in that the radial plate portion of each of the two superimposed fans has holes or thinned portions in at least one common zone.
10. A rotary electrical machine according to Claim 8, characterised in that the radial plate portion of each of the two superimposed fans includes holes or thinned portions in different zones.
11. A rotary electrical machine according to Claim 1, characterised in that the rotor is pre-balanced.
12. A rotary electrical machine according to Claim 11, characterised in that a balancing hole of the rotor is in line with a blade of the pre-balanced fan.
13. A rotary electrical machine according to Claim 1, characterised in that the central bore (40) of the fan is de-centred so as to bring the axis of rotation of the machine into coincidence with the centre of gravity of the fan.

14. A rotary electrical machine according to Claim 1, characterised in that the fan is fixed eccentrically on the rotor in order to bring the axis of rotation of the machine into coincidence with the centre of gravity of the fan.

15. A rotary electrical machine according to Claim 1, characterised in that the

5 rotor is a claw-type rotor (45).

16. A method of mounting a fan on a rotor of a rotary electrical machine, the rotor including zones reserved for pre-balancing purposes, characterised in that it includes operations of balancing the fan and then of fastening the balanced fan on the rotor.

10 17. A method according to Claim 15, characterised in that the operation of balancing the fan consists in determining a centre of gravity of the fan in a three-dimensional Cartesian frame (XYZ), and forming thickened and/or thinned zones in the radial plate portion or on the blades of the fan, so as to bring the centre of gravity of the fan into coincidence with the axis of rotation (XX) of the rotary

15 electrical machine.